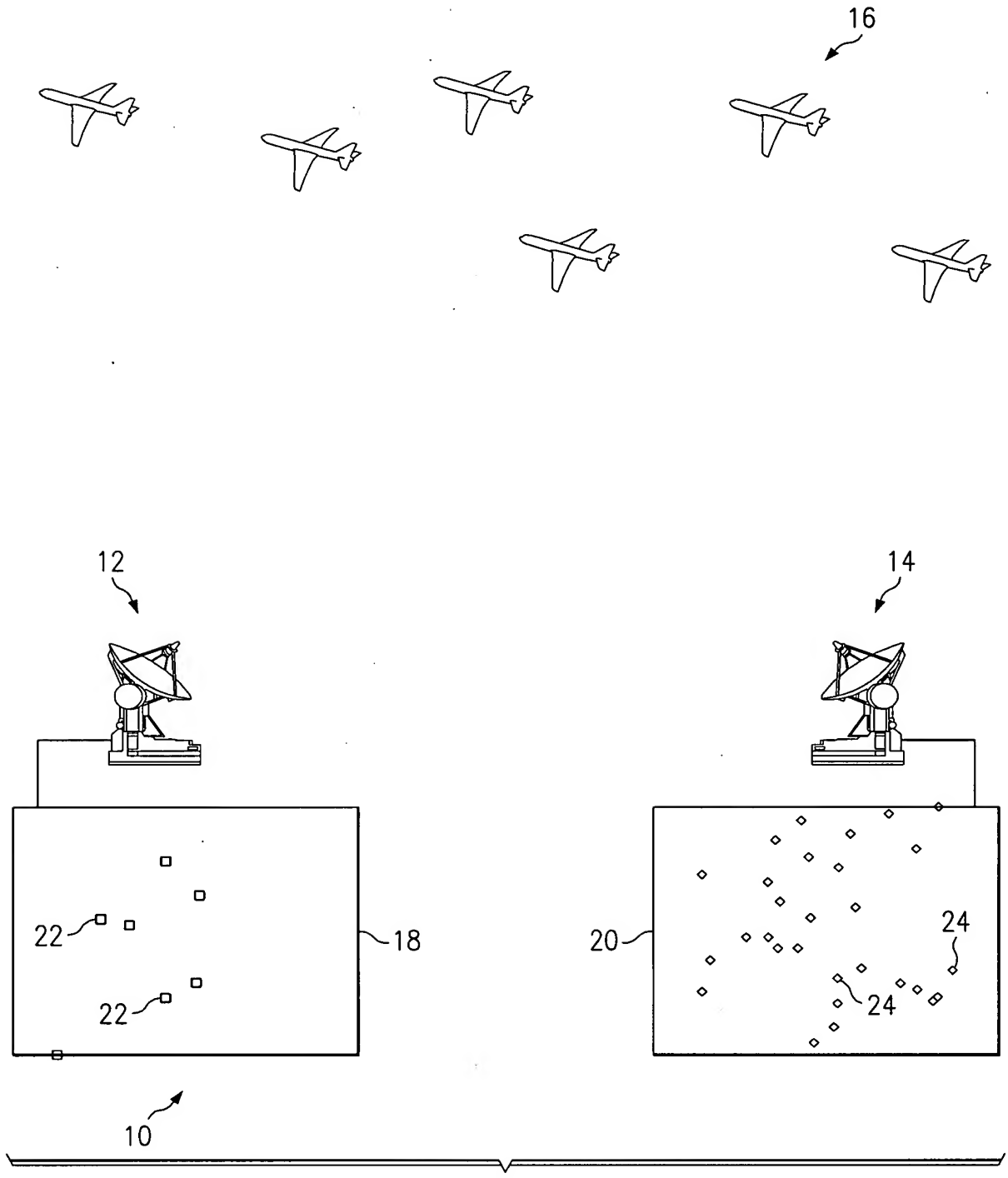


FIG. 1

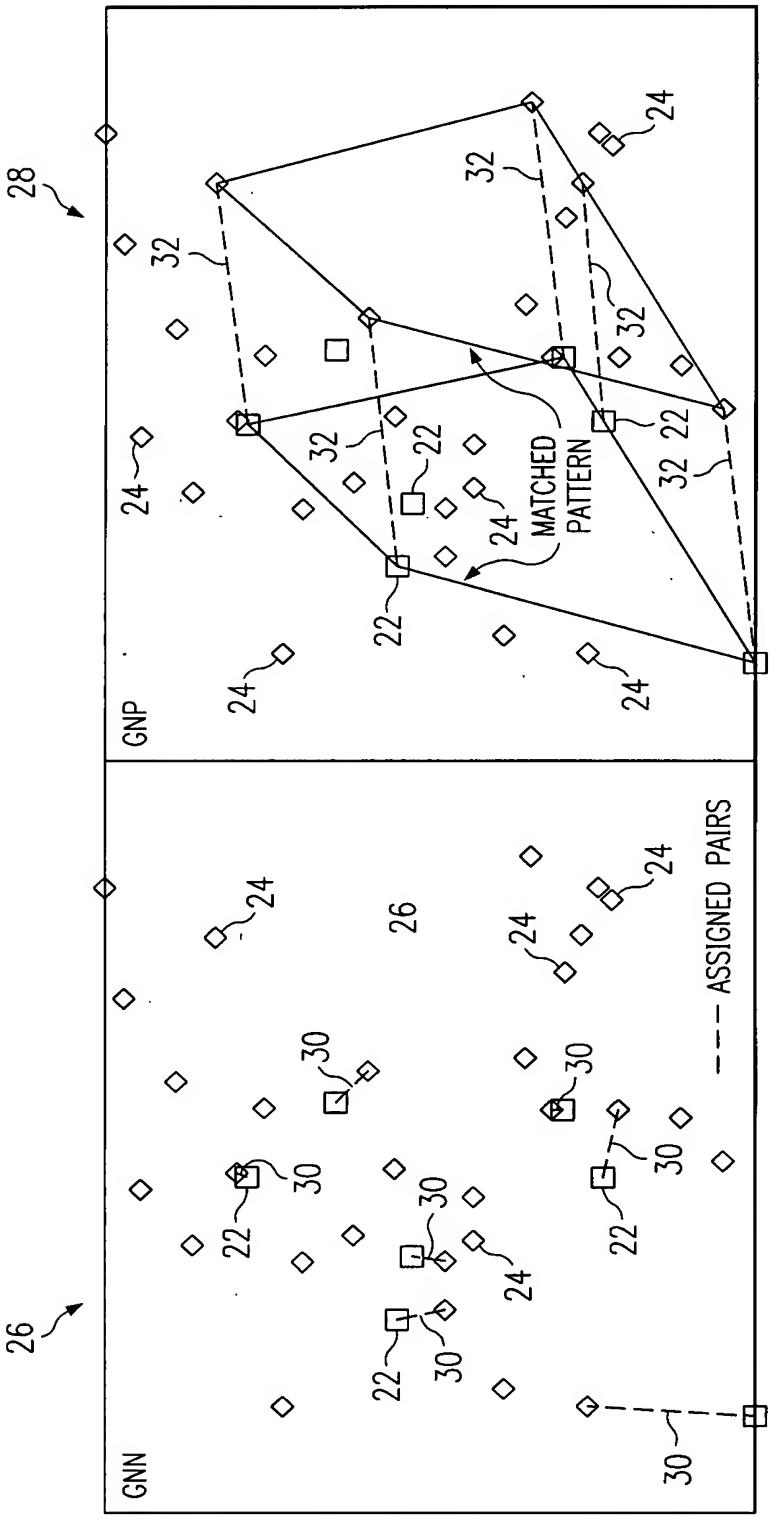


FIG. 2

FIG. 3

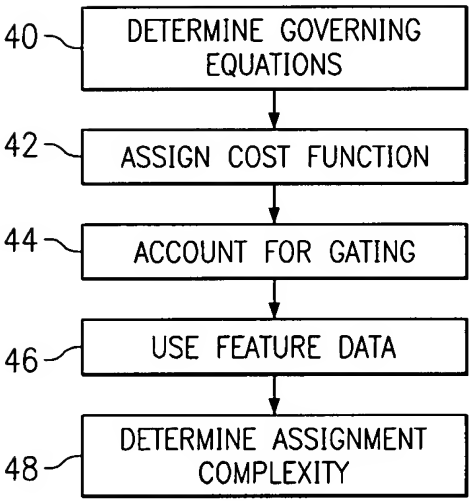
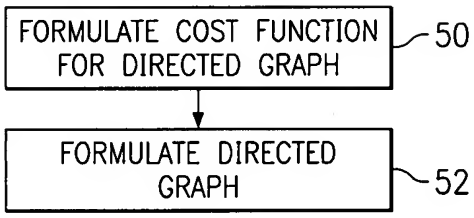


FIG. 4



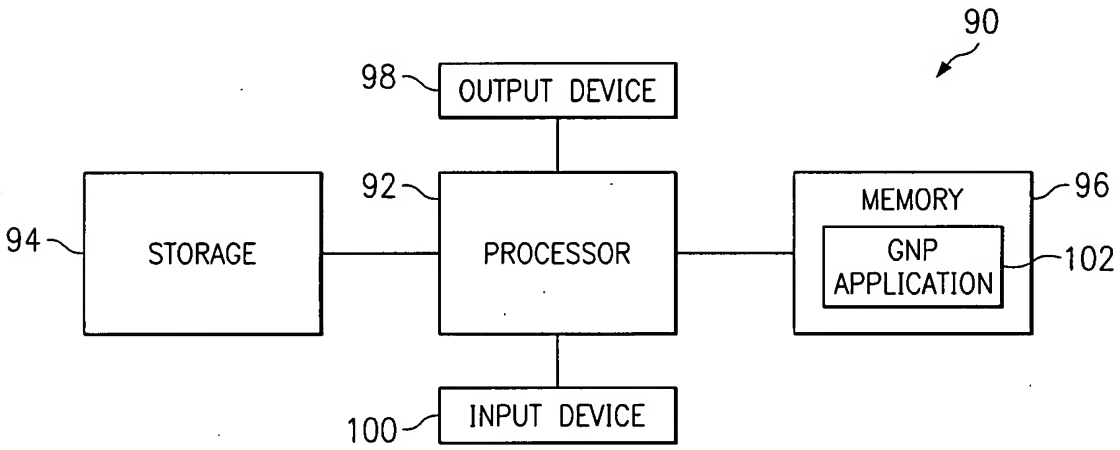


FIG. 6A

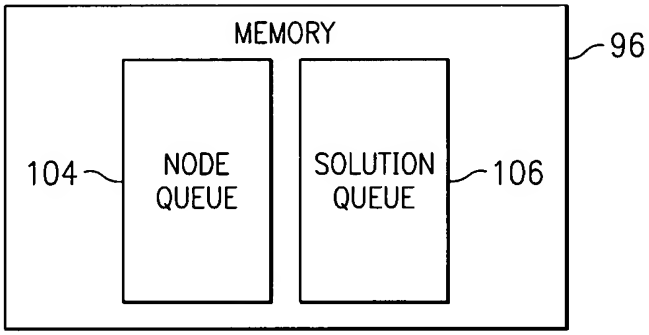


FIG. 6B

FIG. 5A

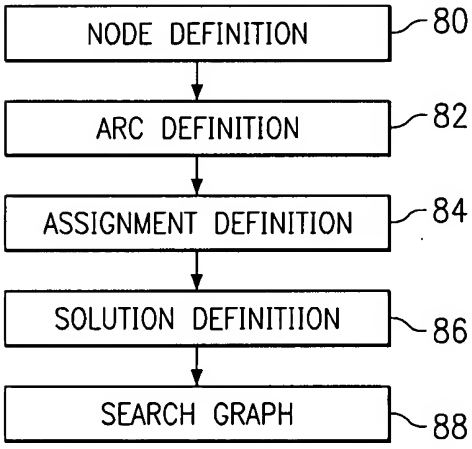


FIG. 5B

k ASSIGNMENT DECISIONS HAVE BEEN MADE AT STAGE s. EACH NODE AT STAGE s HAS (m−s) DECISION ARCS LEADING FROM IT. STAGE m HAS ALL COMPLETED HYPOTHESES.

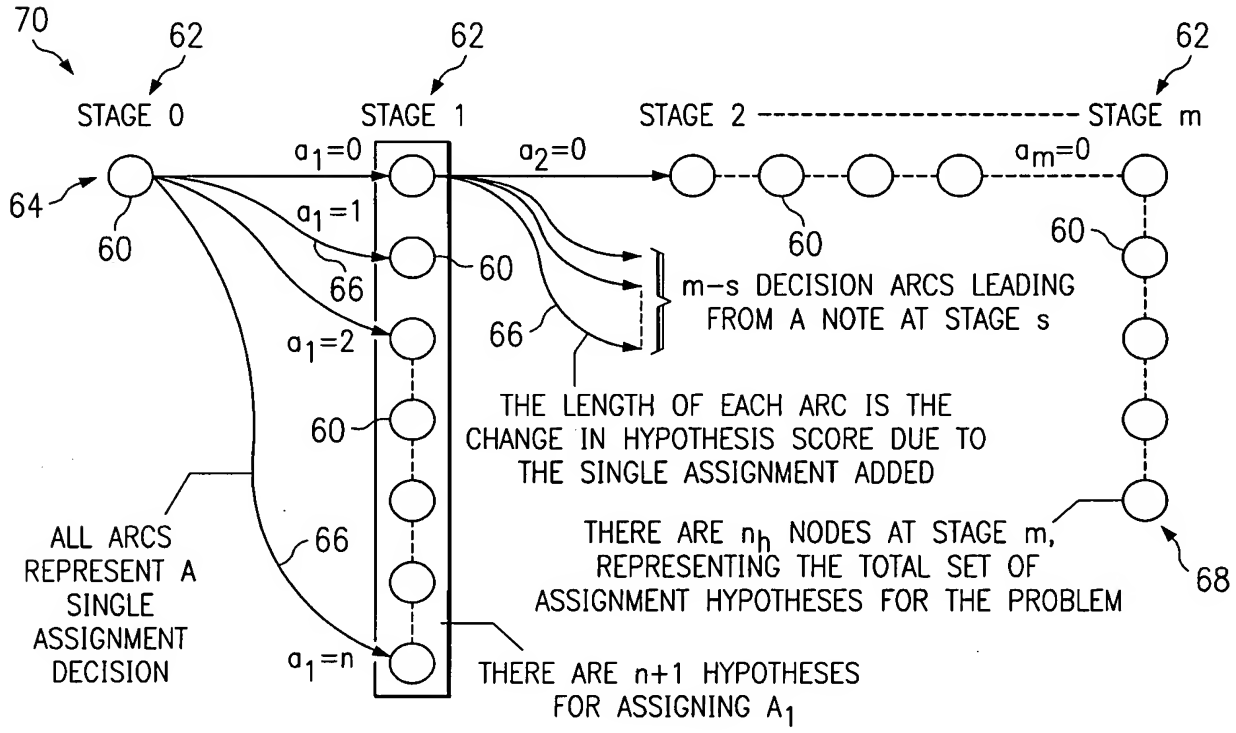
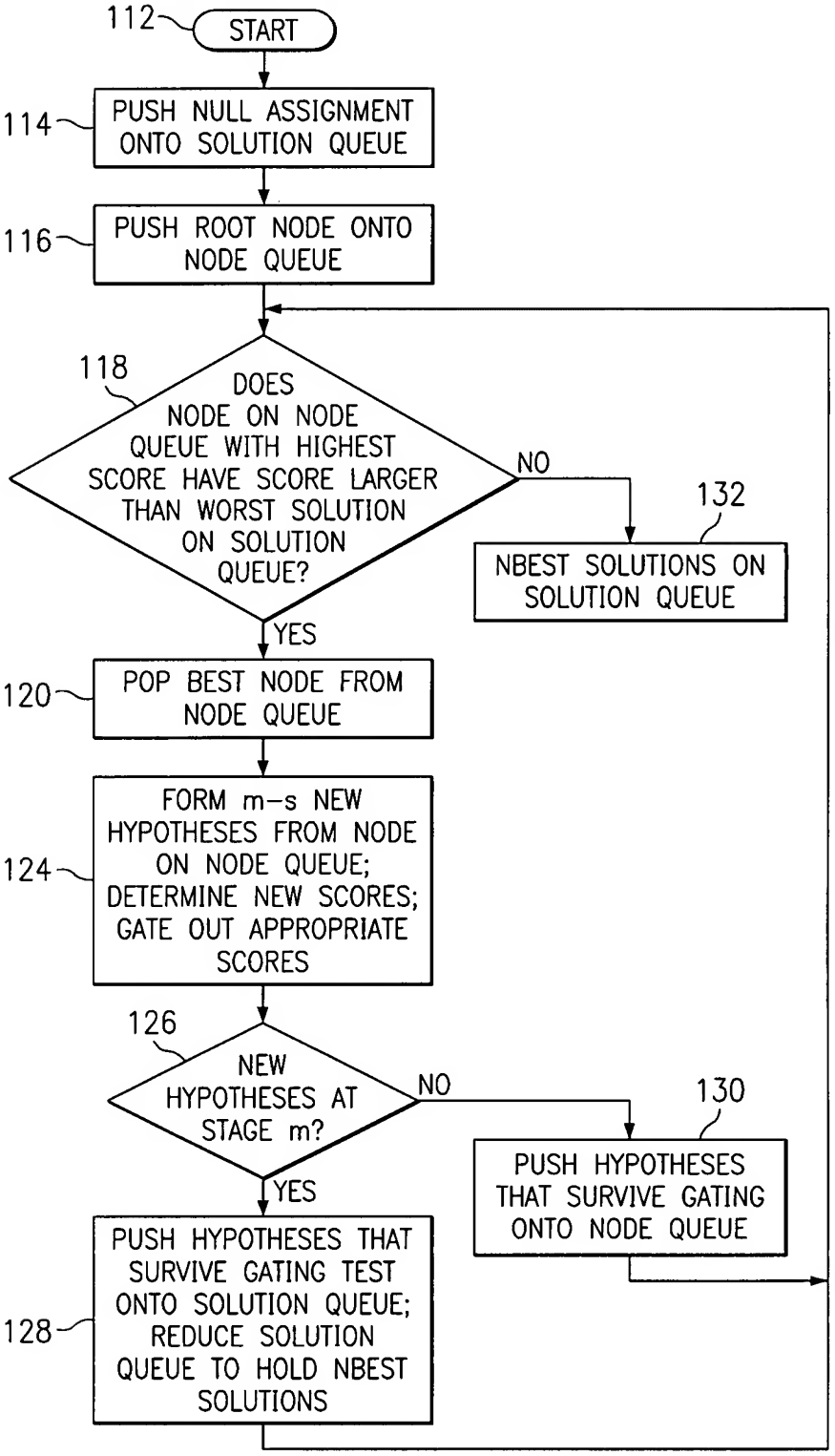


FIG. 7


112
START
114
PUSH NULL ASSIGNMENT ONTO SOLUTION QUEUE
116
PUSH ROOT NODE ONTO NODE QUEUE
118
DOES NODE ON NODE QUEUE WITH HIGHEST SCORE HAVE SCORE LARGER THAN WORST SOLUTION ON SOLUTION QUEUE?
NO
132
NBEST SOLUTIONS ON SOLUTION QUEUE
YES
120
POP BEST NODE FROM NODE QUEUE
124
FORM m−s NEW HYPOTHESES FROM NODE ON NODE QUEUE; DETERMINE NEW SCORES; GATE OUT APPROPRIATE SCORES
126
NEW HYPOTHESES AT STAGE m?
NO
130
PUSH HYPOTHESES THAT SURVIVE GATING ONTO NODE QUEUE
YES
128
PUSH HYPOTHESES THAT SURVIVE GATING TEST ONTO SOLUTION QUEUE; REDUCE SOLUTION QUEUE TO HOLD NBEST SOLUTIONS

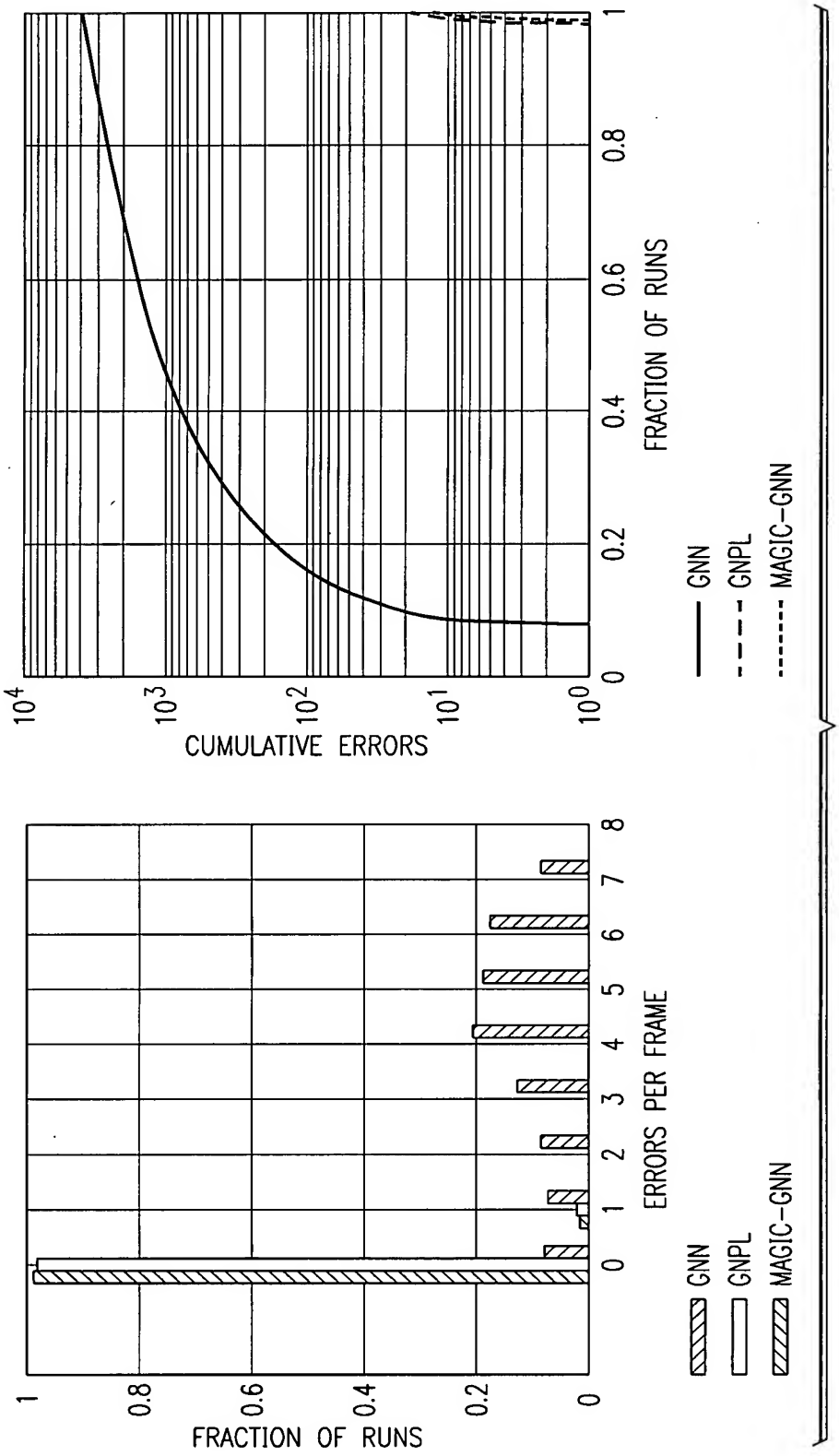

CUMULATIVE ERRORS
10^4
10^3
10^2
10^1
10^0
FRACTION OF RUNS
0
0.2
0.4
0.6
0.8
1
GNN
GNPL
MAGIC-GNN
ERRORS PER FRAME
0
1
2
3
4
5
6
7
8
FRACTION OF RUNS
1
0.8
0.6
0.4
0.2
0
GNN
GNPL
MAGIC-GNN

FIG. 8

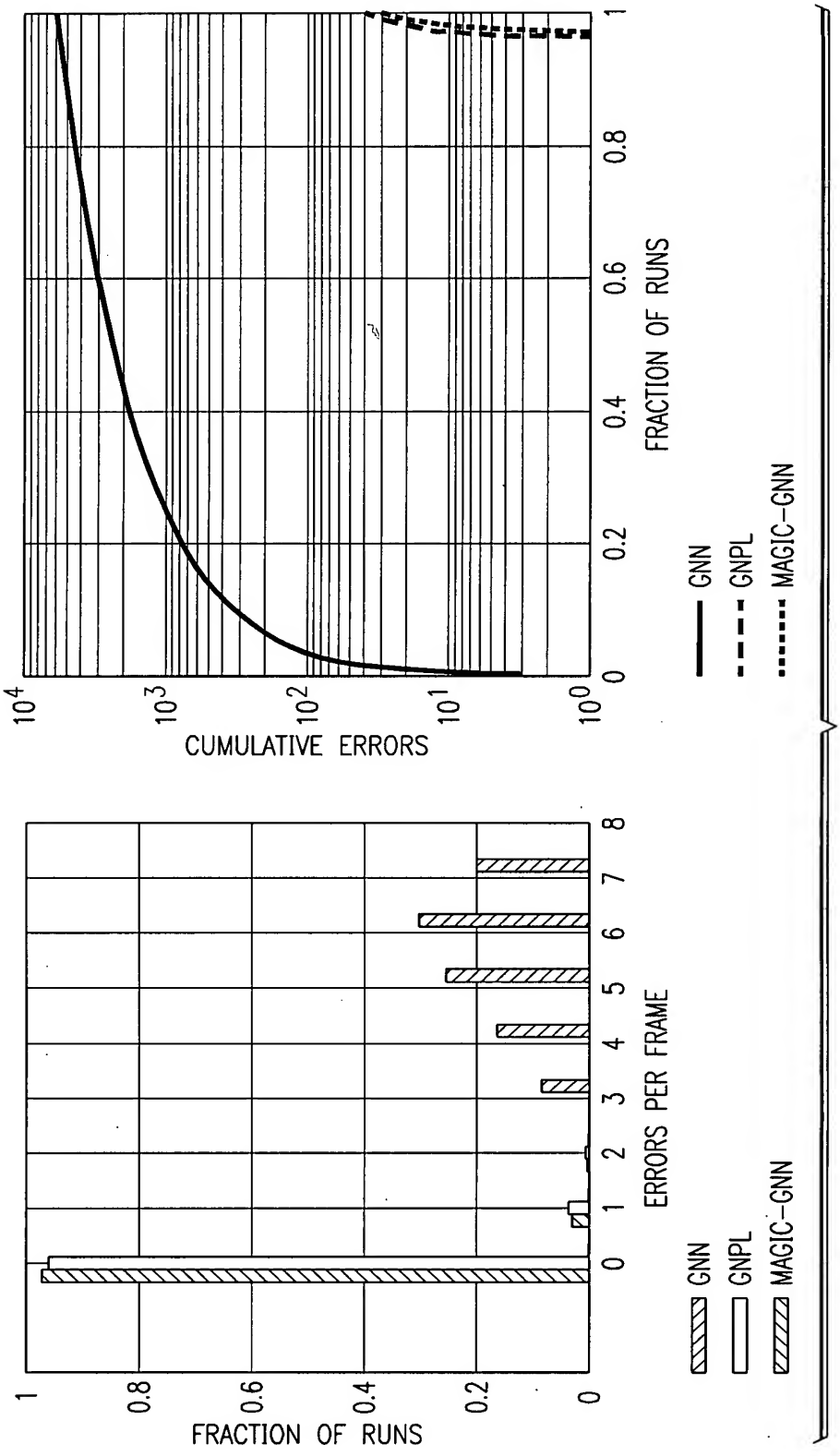

FRACTION OF RUNS
CUMULATIVE ERRORS
GNN
GNPL
MAGIC-GNN
ERRORS PER FRAME
FRACTION OF RUNS
GNN
GNPL
MAGIC-GNN

FIG. 9

FIG. 10

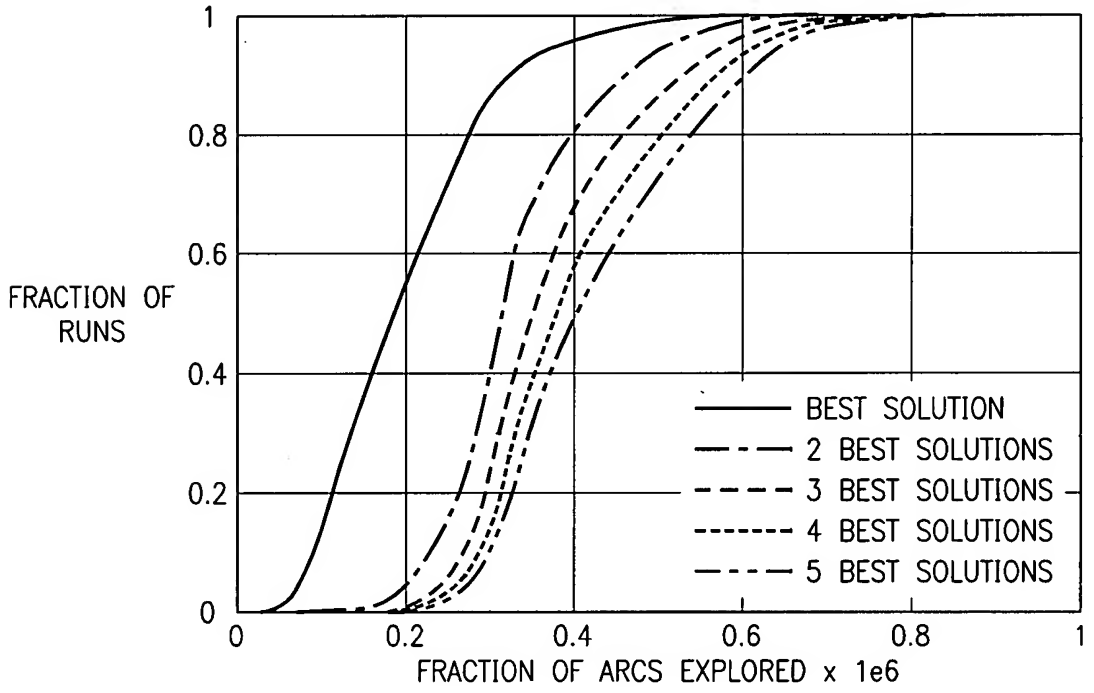
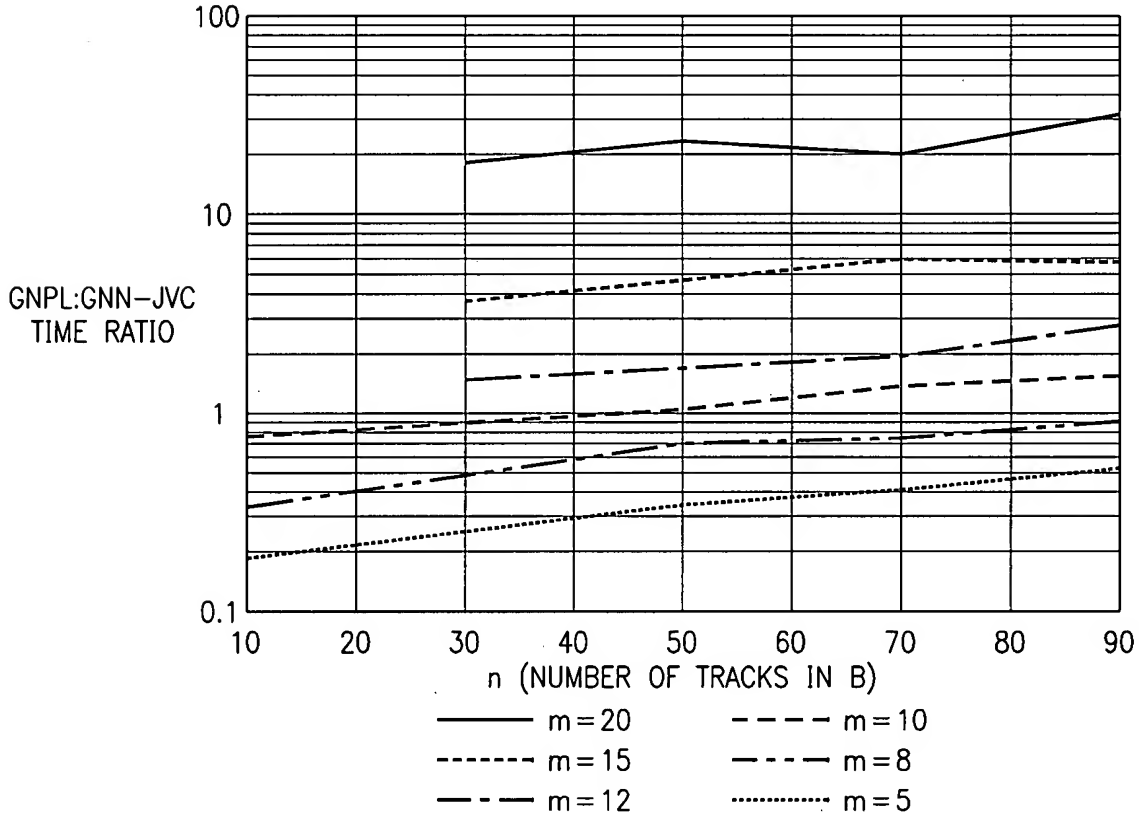

FRACTION OF RUNS
1
0.8
0.6
0.4
0.2
0
0
0.2
0.4
0.6
0.8
1
FRACTION OF ARCS EXPLORED x 1e6
BEST SOLUTION
2 BEST SOLUTIONS
3 BEST SOLUTIONS
4 BEST SOLUTIONS
5 BEST SOLUTIONS

FIG. 11


GNPL:GNN–JVC TIME RATIO
100
10
1
0.1
10
20
30
40
50
60
70
80
90
n (NUMBER OF TRACKS IN B)
m=20
m=15
m=12
m=10
m=8
m=5

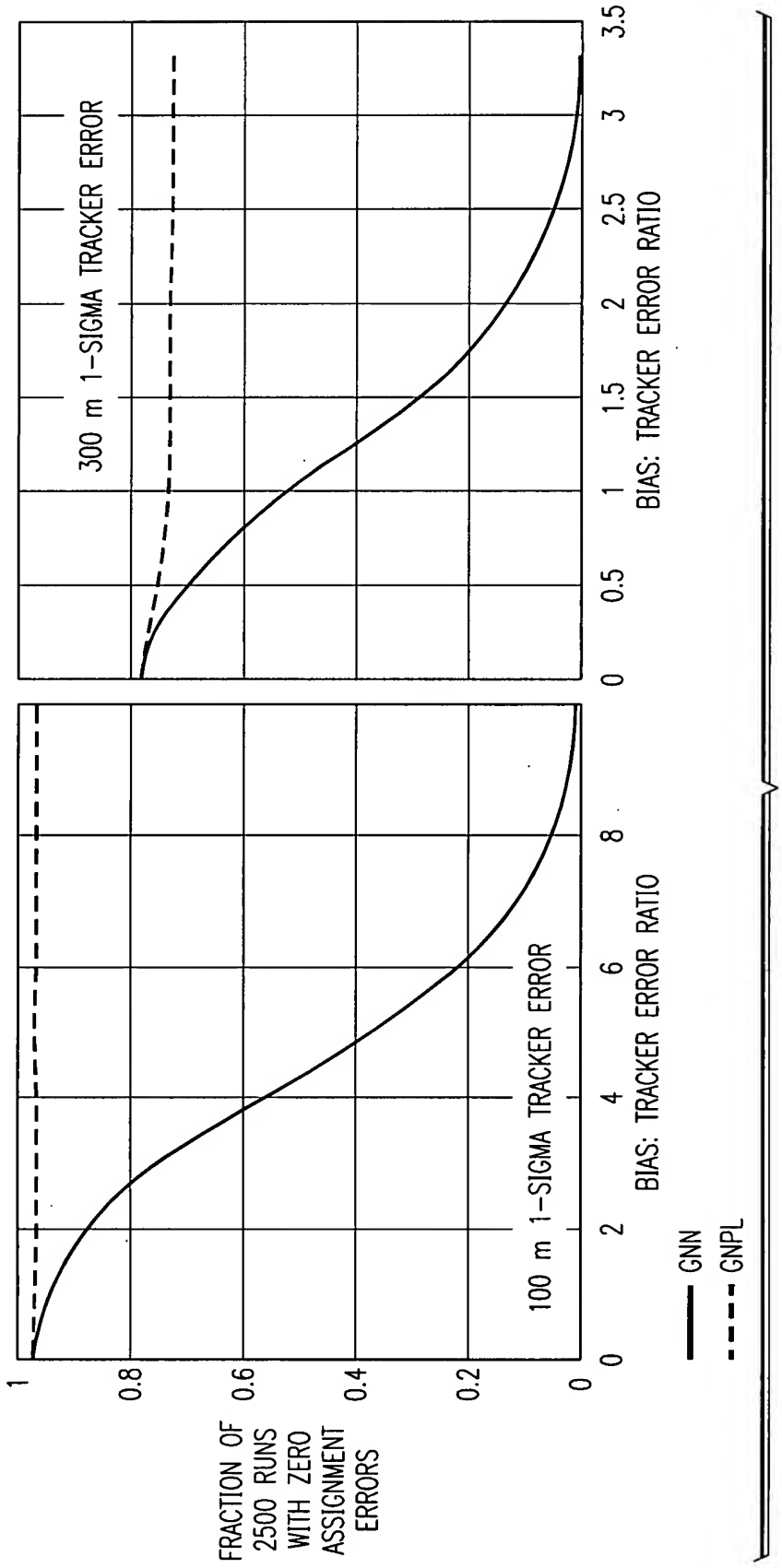

FRACTION OF 2500 RUNS WITH ZERO ASSIGNMENT ERRORS
1
0.8
0.6
0.4
0.2
0
100 m 1-SIGMA TRACKER ERROR
0
2
4
6
8
BIAS: TRACKER ERROR RATIO
300 m 1-SIGMA TRACKER ERROR
0
0.5
1
1.5
2
2.5
3
3.5
BIAS: TRACKER ERROR RATIO
GNN
GNPL

FIG. 12